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SHORT SCHOOL TIME,

WITH

MILITARY OR NAVAL DRILL;

IN CONNECTION ESPECIALLY WITH THE SUBJECT OF

AN EFFICIENT MILITIA SYSTEM.

BY E. A. MEREDITH, LL.D.

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Read before the Literary and Historical Society, Quebec.

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SHORT SCHOOL TIME, WITH MILITARY OR NAVAL DRILL:

IN CONNECTION ESPECIALLY WITH

THE SUBJECT OF AN EFFICIENT MILITIA SYSTEM.*

By E. A. MEREDITH, LL.D.

(*Read before the Society, 1st April,* 1864.)

In 1860 a Royal Commission was appointed in England to report upon the state of popular Elementary Education in that country. The Commission included the names of the late Duke of Newcastle, Mr. W. Nassau Senior, and many other eminent educational reformers, peculiarly qualified for a work of such national importance. The results of the Commissioners' labors are contained in six bulky volumes, which form a valuable Repertory on the subject of National Education.

Without at all undervaluing the importance of the labors of the Commissioners, it may be safely asserted that no part of their able and voluminous report is so suggestive, none so certain to bring about eventually a radical and permanent revolution in the whole system of education, as the short and unpretending communication, published in the appendix, addressed by Mr. Edw. Chadwick to Mr. Senior.†

It is to this paper of Mr. Chadwick, and to a subsequent explanatory letter from him on the same subject, also addressed to Mr. Senior, that I am mainly indebted for the facts and arguments which follow.

The object of Mr. Chadwick's paper is to establish that in ordinary public schools, too much time is devoted to book instruction, too little to the physical training of the pupil; that the mind

* The substance of this paper appeared in a letter addressed by the author to the Editor of the *Morning Chronicle* of this city, and published 25th June, 1862.

† Half-school time, and Military and Naval drill in Public Schools.

is overworked—the body insufficiently exercised; that book-work is generally prolonged much beyond the capacity of the pupil, to the injury alike of his physical and mental powers. He further asserts that it is demonstrable, nay that it has been demonstrated by actual experiment, that by employing in the physical training of the pupils, more particularly in systematic military and naval drill, a portion of the time, now uselessly or hurtfully misspent on books, incalculable benefits, physical, moral, intellectual and economical, will result to the persons taught, and, as a matter of course, also to the nation.

The startling novelty of Mr. Chadwick's views, and the very magnitude of the benefits which he claimed as certain to follow from the general adoption of the plan of Education which he had inaugurated, had a tendency to make most people incredulous of the project, if not to reject it altogether as Utopian. The high reputation, however, of Mr. Chadwick, who had been for upwards of a quarter of a century an earnest and able laborer in the cause of social reforms, especially in matters connected with popular Education, would have amply sufficed with all thoughtful men to secure a respectful consideration for any opinion, however strange or paradoxical, which had received the sanction of his advocacy. But Mr. Chadwick did not rest satisfied with mere opinions or arguments in support of his views. He gave hard, unanswerable facts—facts sustained by the concurrent testimony of the most intelligent and experienced school teachers and of some of the most able military men in Great Britain.

Mr. Chadwick's revolutionary theories, for such in truth they were, gave rise, as might be expected, to no little discussion in England. France and Germany, and other European countries, took up the question, and on this continent too, especially among our practical neighbors in the States, Mr. Chadwick's views attracted not a little attention. Here, and there too, but particularly in England, the system was put to the true test, that of actual experiment. And it may be asserted, beyond controversy, that all the discussions which have taken place upon the merits of

Mr. Chadwick's system, all the experience of its working, wherever it has been fairly tried, have alike served to establish more and more its infinite superiority over the old *regime*.

It cannot fail to strike us as passing strange that after so many centuries of experience in Great Britain, and everywhere throughout the civilized world, of various systems of popular education, after the countless volumes which have been written on this, the most important of all social questions, we should find ourselves, at this age of the world, in the middle of the nineteenth century, debating about the primary and fundamental principles of the science of education. It might reasonably be supposed that the whole subject had been long since exhausted, that the grand principles of education had been absolutly established, and set at rest for ever. But this is far from being the case; on the contrary, it has very recently been asserted with truth that: "Many of the very vital points of education, the education of the higher and the lower classes, are still, to a great extent, open questions."

In every scheme of education, whatever may be its peculiar objects, whatever the particular means selected for carrying them out, there is clearly one question which meets us at the very threshold, and which demands a categorical answer: "What is the amount of time, the number of hours per day, during which children may be profitably employed in acquiring instruction?" in other words: "What are the limits physical and psychological of a child's capacity of attention?" And yet this all-important and most natural preliminary question, is the very one which has, within the last few years, been formally mooted, apparently for the first time, by Mr. Chadwick.

It is, happily, unnecessary to enter into any elaborate argument as to the paramount importance of every thing connected with the subject of national education. To the general proposition that national education is a topic of the highest importance to the State, all are prepared to give a willing assent. But yet it may be doubted whether many fully appreciate the momentous import of the subject; how, in a manner, it embraces and involves all other great social questions. It is, in truth, the question of

questions. All the perpetually-recurring social problems, mendi… cancy, pauperism, crime, physical deterioration, habitual juvenil… delinquency, and insanity itself, are ultimately connected with, if no… in some sort different phases of, this great primal question? Can i… be gainsaid that all the social plagues in this melancholy catalogue… arise in a very large degree from defective early education? Remedy the defects in popular education, and you, *pro tanto*, diminish all the unnumbered evils of which these defects are the fruitful parent. This, therefore, is the great question to which before and beyond all others, statesmen, legislators, philanthropists and economists, should direct their most earnest attention. To promote the cause of general education is an object worthy the ambition of the noblest minds; one for which every true lover of his kind might well be content

"To scorn delights and live laborious days."

The schools established for the factory children under the provision of the Short-time Factory Bill,* were the first in which the half-time teaching was established, and it is in the astonishing success which has attended these half-time schools, when *provided*

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* It is a curious and interesting fact, that the first experiment upon a large scale, of Mr. Chadwick's reformed system of education, was intimately connected with, and in fact was the incidental result of, another important effort of a very different kind of which Mr. Chadwick was also the author, for the benefit of the youthful population of England; the effort, namely, to protect the children of the poorer classes from being overworked in the factories.

When the bill for limiting the hours of work of children in factories was before the Legislature, the Government called upon Mr. Chadwick, who had given much attention to the whole subject, to prepare the details of the measure. In doing so Mr. Chadwick inserted provisions for the limitation of children's labor in factories to six hours; ten hours being the time originally proposed; and further, principally, however as a *security against overwork*, he inserted a provision in the bill that all children, while employed in factories, should be three hours each day under a competent school teacher. Mr. Chadwick was himself persuaded, from his own information and experience, that the time thus allowed for the purposes of instruction was really as much as could under any circumstances be profitably devoted to it; but the primary object of the provision was to secure for the children bodily rest rather than mental education. By providing that the children should be three hours daily in the school room, he secured effectually three hours absence from the factory. Whether anything was learned in the school or not, the poor factory children being there, gained at least one thing—a short respite from their daily toil—they no longer were as before,

"From morn to midnight tasked to earn their little meal!"

ith properly trained and competent teachers, that Mr. Chadwick nds the most powerful argument in favor of his system. Thus rom the philanthropic effort to rescue the overtasked children of he poorer classes from the evils inflicted on them by excessive *odily* work, has arisen another and even more important and comprehensive school reform—one which will embrace the children not only of the poorer, but of the middle and upper classes—a reform which has for its object to relieve all children who attend schools from the evils resulting from over *mental* work. The same general principle lies at the root of both the reforms in question, namely: "That working young children during the same stages as adults is always injurious overwork for young and growing children, whether the work be mental or manual."

We shall now proceed to point out some of the evils, so far at least as over mental work is concerned, of the system of education usually followed in our public schools, and we shall then explain the half-time system more in detail, noting the sort of physical training—military and naval drill—which Mr. Chadwick advocates; and lastly, the enormous benefits to the individual and the nation which may be expected to flow from the general adoption of the new system; under the last head will be described, at some length, the important bearing of the proposed reformation in our school system upon one of the great questions of the day in Canada,—the question, namely, of our national defences.

First, then, let us consider briefly the routine of education at present pursued in the majority of our public schools, and examine what are its effects upon the mental and bodily health of those who are subjected to it.

We shall here quote the words of a recent able writer in the States, who has discussed this subject with reference to the school system of the Union. His remarks, however, are as applicable to the school system of Canada as to that of the United States:—

"Six hours a day, for the most part, is the allotted school time in this part of the country. Occasionally we find it five, and as often probably seven. The rooms, with some exceptions, are badly warmed and badly ventilated, the thermometer ranging, in winter, from 55 to 80, and the

air contaminated by the respiration of one or two hundred pairs of lungs, and the impurities that arise from a leaky, over-heated stove or furnace. The time not devoted to study is occupied in recitations, or exercises that require a considerable degree of mental activity. To accomplish all the tasks, the regular school hours are seldom sufficient, and more or less time must be given to study out of school. It may be a single hour; it may be two, three or four. The time will be determined by the amount of the tasks; by the ambition, capacity or excessive anxiety of the pupil. With quick-witted children, who have no very strong desire to excel, and those who have neither desire nor capacity to excel, it is short. On the contrary, with the sluggish, but conscientious intellects, with the ambitious who strive for distinction, and the morbidly sensitive and timid, it is long."*

The author from whom I have quoted then gives several examples of the lessons learned in a day in several public schools taken at random, and adds:—

"These may be considered as average examples of the amount of work now put upon the youthful brain. They are the first that came to hand, but I have reason to believe that additional statistics of this kind would oftener show a larger than a smaller requirement. They will enable every one to judge for himself with sufficient accuracy, whether the strain to which they subject the mind, is or is not, compatible with the highest degree of healthy endurance.

"In connection with this matter of out-of-school study, it must be considered that much of it is pursued in the evening, often until a late hour, —a practice more pernicious to the health, in youth or adult, than any other description of mental exercise. The brain is in no condition for sleep immediately after such occupation. The mind is swarming with verbs and fractions and triangles, and a tedious hour or two must pass away before it falls into a restless, scarcely refreshing slumber. Jaded and dispirited it enters upon the duties of the day with little of that buoyancy which comes only from 'nature's sweet restorer.'

"Thus it is that in all our cities and populous villages, the tender mind is kept in a state of the highest activity and effort, six or eight hours a day, for several years in succession, with only such intervals of rest as are furnished by the weekly holiday, and the occasional vacation. Sunday can hardly be admitted among these intervals, for that day has also its special school, with its lessons and rewards. In other words it is subjected to an amount of task-work which, estimated merely by the time it requires, is greater than what may be considered a proper allowance to a cultivated adult mind."

It scarcely needs to be proved that such a mental strain as this upon the youthful mind must be injurious. We hardly require the testimony of a medical man to the fact: "That the young and adult brains possess very unequal capacities of application and endurance," or that "it is the law of the animal economy that the

* Dr. Ray. *Mental Hygiene.* p. 122.

various organs do not arrive at their full maturity of vigor and power until some time after the adult age has been fairly commenced." To expect the same amount of mental endurance from a child of ten or twelve as from a full-grown man is about as reasonable as to expect the former to carry the same load, and for the same distance, as the latter.

But beside these evils to the mental health of children, resulting from the strain upon their mental powers, there is the physical evil resulting from the prolonged and unnatural physical restraint and sedentary confinement of children. We have high authority for stating that the enforced stillness of growing boys or girls in a school-room, however well warmed and ventilated, for five or six hours in the day, is a violation of the primary laws of physiology. The restlessness and inattention of the unfortunate little victims of our modern system, after a few hours schooling, their irrepressible eagerness to escape from their restraint, notwithstanding all the artifices of the teacher to interest them, might of themselves warn us that we are doing violence to nature. "The chief question," writes Dr. Schreiber, of Leipsic, is, "how are our children brought up? Is it according to the laws of nature? The answer is no, or we should not see so many children who were rosy and healthy before going to school, become pale and bloodless after attending school." Another writer says: "Nature commands children to play and romp, just as she does young colts and lambs. Pen them up in school, fetter their limbs, shut them out from God's sunshine and vivifying breezes, and what do we make them? Their physical integrity is certainly impaired, but is not their intellectual, nay, is not their moral integrity also affected by this unnatural and artificial system?" In their zeal for the mind, our modern educationists would seem to have altogether lost sight of the body. They forget that for the perfect man we must have the "*mens sana in corpore sano*"; they consider not that intimate "consent between mind and body," by virtue of which the former must suffer, if the latter is neglected.

In our modern system of education the physical training of

children has, for the most part, been left altogether to nature or to accident. The evil effects of the system have, therefore, shewn themselves, as might have been anticipated, more among girls than boys; because the former are less likely than the latter to seek for themselves those out-door sports and amusements which counteract, to some extent, the injurious effect of excessive mental labor and bodily confinement.

But it may be alleged that we have exaggerated the evil effects of our present school system on the mental and physical health of the children attending school; we may be challenged to produce proof of our assertion. Innumerable instances are adduced of persons who have gone through the ordeal without any appreciable impairment of their mental or bodily health, and hence the inference is somewhat hastily drawn that the system is innocent of the evils which we have laid at its door.

On this point it will suffice to cite the opinion of Dr. Ray, who, from his well-known ability and large experience in mental diseases, is peculiarly competent to speak with authority upon the subject:

"The manner in which the evil (resulting from excessive mental application in schools) is manifested, is not very uniform, but however various the results, they agree in the one essential element of a disturbed or diminished nervous energy. It rarely comes immediately in the shape of insanity, for that is not a disease of childhood or early youth. It impairs the power of concentrating the faculties, and of mastering difficult problems, every attempt thereat producing confusion and distress. It banishes the hope and buoyancy natural to youth, and puts in their place anxiety, gloom, and apprehension. It diminishes the conservative power of the animal economy to such a degree, that attacks of disease, which otherwise would have passed off safely, destroy life almost before danger is anticipated. Every intelligent physician understands that, other things being equal, the chances of recovery are far less in the studious, highly intellectual child than in one of an opposite description. Among the more obvious, and immediate effects upon the nervous system, are unaccountable restlessness, disturbed and deficient sleep, loss of appetite, epilepsy, chorea, and especially a kind of irritability and exhaustion, which leads the van of a host of other ills, bodily and mental, that seriously impair the efficiency and comfort of the individual.

"I have said that insanity is rarely an immediate effect of hard study at school. * * * When a person becomes insane, people look around for the cause of his affection, and fix upon the most recent event apparently capable of producing it. *Post hoc propter hoc*, is the common philosophy on such occasions. But if the whole mental history of the patient were clearly unfolded to our view we should often find, I apprehend at a much

early period, some agency far more potent in causing the evil, than the misfortune, or the passion, or the bereavement, or the disappointment which attracts the common attention. Among these remoter agencies in the production of mental disease, I doubt if any one, except hereditary defects, is more common at the present time, *than excessive application of the mind when young.* The immediate mischief may have seemed slight, or have readily disappeared after a total separation from books and studies, aided, perhaps, by change of scence ; but the brain is left in a condition of peculiar impressibility which renders it morbidly sensitive to every adverse influence."

Is it not in consequence of this unduly severe mental toil together with the absence of proper physical training, that we find that many a boy of high promise, the delight of his parents, the *dux* of his school, is found to "unbeseem the promise of his youth" and turn out a very common place, if not a dull and heavy man? Is not this the reason why so many intellectual and interesting children are like medlars rotten before being ripe, and does it not supply us with the true answer to Dr. Johnson's query: "What becomes of all those prodigies?"

Before leaving this part of my subject it may not be out of place to note very briefly the great and characteristic difference in this particular between the modern system of education, and that which obtained among some of the leading nations of antiquity. It is curious and instructive to mark the different degrees of importance assigned to the physical part of education in the ancient and the modern world.

"Among the Persians" we are told, "the entire education of the youth from their fifth to their twentieth years was confined to three things: riding, shooting with the bow, and *speaking the truth.*" Here Physical education is the chief, almost the only element, and mental education is not even mentioned. This is just such a system of education as we might expect to find among a people removed only a few degrees from the savage state. Advancing to times of civilization we come to the Greeks and Romans. Both these nations recognized, as we all know, the necessity and importance of mental education; and it formed, accordingly, an essential part of their system of education. But still physical training was by no means neglected; on the contrary, it was regarded

as an essential if not the most important part of the training of the youth. The very names, indeed, of the Greek and Roman schools—*Gymnasia* and *ludi*—indicate places intended primarily for physical exercise.

Looking at the Greek and Roman plan of education we, with our modern views as to the paramount importance of intellectual culture, may feel inclined to impeach it as giving too much importance to physical training, to the disparagement or neglect of mental cultivation. But when we call over the bright muster-roll of poets, statesmen, orators, and historians which both of these nations produced, we must pause before we condemn the system of education which can point to such splendid results.

Mr. Chadwick refers with satisfaction to the fact that the authorities of the venerable University of Oxford have recently recognized the necessity of systematised bodily training in connection with the mental labor of the University, and expresses the hope "that we may have from the university an example of the revival of a really classical education, an education founded on the precepts of Plato, Aristotle and Galen, which divided the public education into three parts, of which one was for mental training in the schools, one for bodily training in the gymnasium, and the third tuition in accomplishments as music," &c.

Having dwelt so fully upon the grounds upon which Mr. Chadwick, and other educational reformers following in his track, have impeached the modern system of education, it is almost unnecessary to say that the remedies for the evil of which they complain are two-fold.

1st, A reduction to the proper limits of the time set apart in schools for book instructions; and, 2nd, Systematic physical training of the children; including in that training for the male portion of the school population, naval or military drill, or both.

The extent to which the time usually devoted in schools to book-instruction may be advantageously reduced is a question of detail which cannot probably be conclusively established until the

half-time system has been submitted for a few more years to the test of actual experience. Mr. Chadwick, indeed, asserts, and the testimony of the able and intelligent witnesses examined by him, fully bear out the assertion, that the ordinary school hours may be reduced one-half, without, in the slightest degree diminishing the amount of book-instruction acquired by the pupil in a given time.

Without however attempting, here, to fix with mathematical nicety the precise number of hours during which book-instruction may be profitably carried on in schools: it may, at least, be laid down as an axiom that such instruction ceases to be profitable, and should, therefore, be given up, when the pupil is no longer able to give his entire attention to what is taught. The instant the pupil becomes fatigued and tired, the instant he loses the power of *bright voluntary attention* (as one of the witnesses aptly calls it), it is time to stop the lesson. Everything done after that is either unprofitable or hurtful, or both. If a boy makes an extraordinary effort to keep his attention fixed on the subject before him, when his capacity of voluntary attention is exhausted, the mental effort is injurious. If, on the other hand, the boy merely makes believe that he is attending to his lesson when his thoughts are on his marbles or his tops, he is acquiring a dishonest *moral* habit, that of pretending to do what he is not doing; a fatal *mental* habit, too likely to cling to him through life, of looking at a book without thinking of what he is reading, a habit of dawdling over work; a habit the very opposite to that which is so invaluable in real life, that of doing earnestly the business of the moment; of thinking of it and nothing else for the time, in obedience to the teaching of the golden maxim "whatever thy hand findeth to do, do it with thy might."

Of the *quality* of the mental training in our modern schools we have said nothing; our special object has been to protest against the *quantity* of mental work. For the purpose of the present paper it is, fortunately, not necessary to consider the much vexed question as to what constitutes the best kind of mental discipline for children; to determine, for example, whether

mathematics, languages or the natural sciences form the best sort of intellectual gymnastics. This is not the place to enforce the truths which are now happily beginning to be at least dimly recognized: that children should be made to learn as much as possible by and through their senses, by their own powers of observation: that when it is possible they should be made to study natural objects, the things themselves, rather than the signs of things—words: that the senses themselves, as well as the reasoning powers, should be carefully cultivated: and that the right education of our senses, especially of the eye, not only contributes much to our comfort and enjoyment in life, but, in the case of the working classes, adds very materially to their usefulness and efficiency, and consequently to their value as workmen.

I cannot, however, refrain from alluding, in passing, to the very narrow and mistaken view which many persons take of education. Physical education they wholly ignore, and of intellectual education they take a very one-sided view. With them intellectual education means nothing more than imparting to the child a certain amount of knowledge, and they gauge the value of education by the quantity of information acquired in a given time. Whereas the aim and object of education should be, as the word itself might teach us, to secure the healthy growth and development of the whole man—of all his powers and faculties, physical, moral and intellectual. The value even of the intellectual training which a boy receives at school or college is not to be tested solely or chiefly by the amount of knowledge he has acquired, the number of dates or facts he may have learned; but rather by the mental discipline he has undergone, the mental power and force he has acquired, the intellectual tastes and habits he has formed; not by the information he has stored up, but by his thirst for information, his power of grasping facts, his faculty of judging rightly; not in fact, by what he has done, but what he has the power and the will to do; not by what he is *in esse* but what he is *in posse*. The mistake to which I have referred, as to the objects of education has led to the "cramming" or forcing system

which is the bane of modern education. We insist that everybody shall know everything. As one of our most delightful modern Essayists writes:—"We may in sober seriousness apply to the present age the remark which Sydney Smith, in the fulness of his wisdom and his fun, applied to the master of the Pantologies at Cambridge—'*Science is our forte; omniscience is our foible.*'" The advocates for this universal knowledge forget that the mind, as Montaigne says, must be *forged* rather than *furnished—fed* rather than *filled.* They forget that of the mental pabulum which we are forced to take at school, none is of any real use to us, but that portion (and it is generally a very homœopathic portion of the whole) which we can digest and assimilate and make to all intents and purposes our own. All the rest is useless, or rather it is worse than useless; because it tends to impair the tone and vigour of the mental faculties; just as an excess of bodily food weakens the digestive organs and impairs the physical health generally.

The second remedy for the evils of the present school system is to be found in a proper course of physical training for the pupil, including in that training (for boys) regular instruction in military or naval drill, or both.

It is almost needless to say that no system of physical education should supersede that voluntary physical training, those manly out-door games which are the delight and glory of the school-boy: cricket, foot-ball, prisoner's base, and all such field-games, are, in many respects, the very best possible physical training that a boy can have. But there are many schools where such games cannot possibly be resorted to, and what shall we do with these? Establish a system of gymnastics for them. I am quite willing to admit that when it is impossible to procure other exercises, gymnastics may be used advantageously for boys and girls, but I think there is a tendency now-a-days to over-rate the value of artificial gymnastic exercises, and to mistake muscular strength for health; and on this point I may quote the words of a recent able writer on physiology:—

"Gymnastics certainly encourage the development, and increase

the power of certain muscles; and those who exercise their mus
cles in this way will be so far stronger than others. But it doe
not *follow that such persons are healthier than* those who tak
ordinary exercise. It is a remark as old as the time of Hippoc
rates, that men who practise gymnastics are in a dangerous stat
of health. They may increase the power of their muscular system
but, if they do so, it is at the expense of the rest of the body
and it was remarked of old, that the athletes and others, wh
practised gymnastic exercises, were subject to violent disorders
and seldom long-lived.

"It is difficult to prevent boys from taking too much exercise
During the period of growth great fatigue injures the gener
health. But even when gymnastic exercises are so managed as t
avoid this inconvenience, and when they succeed in imparting t
the boy an extraordinary degree of muscular development, I a
perfectly convinced that the natural adjustment of the function
is thus prevented; for, however well fitted the frame of youth ma
be for feats of agility, nature has not adapted it for strength, th
attainment of which she defers until the period of growth i
passed; and, consequently, her plans are deranged, when muscula
strength is artificially and prematurely obtained."*

But admitting, as I am ready to do, that gymnastics, *under pr
per regulations*, may be made useful for the bodily training
youth, for teaching boys the proper use of their hands and limb
generally, a matter of no slight importance; yet it would be foun
costly and difficult to introduce systematized gymnastics in
the schools of the poorer classes; but, further, and this is a mo
important consideration, their usefulness would terminate in th
physical benefits derived from them. Their intellectual and mor
effects would be nil.

To occupy a portion of the time taken from book-instructio
Mr. Chadwick therefore advocates the introduction of regul
military or naval drill, as affording, under every aspect, the be
kind of physical training for the scholars.

* Graves' "Studies in Physiology and Medicine," p. 183.

The paper which was submitted by Mr. Chadwick to the commissioners contains the evidence of a number of intelligent witnesses, principally school-teachers and military men, most of whom speak as to the results produced in schools, where the half-time system, accompanied by military and naval drill, had actually been tried. That evidence Mr. Chadwick triumphantly appeals to as establishing conclusively the great value of military drill, whether regarded with reference to: 1st, The present welfare of the individual pupil; or, 2nd, The interests of the nation.

As to the first head he holds that the evidence shews that the new system is attended with the following sanitary, moral, and economical benefits to the individual pupil. We quote Mr. Chadwick's words:—

1. *Sanitary.*—That the drill is good (and for defective constitutions requisite) for correction of congenital bodily defects and taints, with which the young of a very large proportion of our population, especially the young of the poorer town populations, are affected; and that for these purposes the climbing of masts, and other operations of the naval drill, and swimming, are valuable additions to the gymnastic exercises of the military drill, and when properly taught are greatly liked by boys.

2. *Moral.*—That the systematized drill gives an early initiation to all that is implied in the term discipline, viz., duty, order, obedience to command, self-restraint, punctuality, and patience.

3. *Economical.*—That it is proved, when properly conducted by suppleing the joints, rendering the action prompt as well as easy, by giving promptitude in concurrent and punctual action with others, to add, at a trifling expense, to the efficiency and productive value of the pupils as laborers or as foremen in after life.

The *mental* gain is not noticed by Mr. Chadwick in his first letter, but in the explanatory letter the author clearly brings out this point. "A boy," he says, "who has acquired the same amount of knowledge in one half the time of another boy, must have obtained a proportionately superior habit of *mental activity.*" And this is found practically to be the case; the employers of labor giving the preference to "short-timers" as against "long-timers" wherever they can make the choice.

On the second chief topic, as regards the interest of the nation; Mr. Chadwick argues that the general introduction of the drill is

called for, and will be of the same use as was of old the parochial training* to the use of the bow, he holds that it is proved on practical evidence of officers engaged in the drill:—

1. That military and naval drill are more effectively and permanently taught in the infantile and juvenile stages than in the adolescent or adult stages.

2. That at school it may be taught most economically, as not interfering with productive labor; and that 30 or 40 boys may be taught naval and military drill at 1¼d per week, per head, or as cheaply as one man is now taught; that the whole juvenile population may be drilled completely in the juvenile stage, as economically as the small part of it is now taught imperfectly on recruiting or in the adult stage; and that, for teaching the drill, the services of retired drill sergeants, and naval as well as military officers and pensioners, may be had economically in every part of the country.

3. That the middle and higher class schools should have, in addition to the foot drill, the cavalry drill, which the parents of that class of pupils may afford.

4. That the drill when made generally prevalent (without superseding), will eventually accomplish, in a wider and better manner, the objects of volunteer corps and of yeomanry, which, as interrupting productive occupations, now becoming more absorbing, is highly expensive, rendering all volunteer forces dependent on fitful zeal, and eventually comparatively ineffective; that the juvenile drill, if made general, will accomplish better the object even of the militia; that the juvenile drill will abate diffidence in military efficiency, and will spread a wide pre-disposition to a better order of recruiting for the public service, will tend to the improvement of the ranks of the regular force, whether naval or military, and will produce an immensely stronger and cheaper defensive force than by the means at present in use or in public view.

And, finally, that the means of producing this defensive force, instead of being an expense will be a gain to the productive *power and value of the labor of the country.*

We have not noticed, hitherto, the influence of the new system upon the *morale* and discipline of schools. On this head there is a singular unanimity among the masters of the schools where the experiment has been tried. They all consider the drill as an invaluable help to them in enforcing the ordinary school discipline. And they ascribe the usefulness of drill in this particular to the habits of order, punctuality, of prompt, unquestioning obedience and of respect for their superiors which the boys necessarily acquire during their lessons in drill. Indeed several instances are adduced

*It is perhaps not generally known that up to the end of the fifteenth century, and even later, archery formed part of the ordinary education of the boys of England, and was practised at many public schools. The last Act by which boys were required to be taught archery was passed in 1541.
See Chadwicks explanatory letter, note, p. 42.

by Mr. Chadwick's witnesses, where the military drill having been, from one cause or another, discontinued in a school, the spirit of insubordination became such that the unhappy master was compelled to reëstablish the drill in order to restore the discipline of the school. It would be difficult to find a better practical commentary on the moral value of the new system.

Sir Francis Bond Head gives his opinion on the moral value of drill in very characteristic and forcible language: "The dull sounding, but magic little words of command—'Eyes right!' 'Eyes left!' and 'Stand at ease!' 'Attention!' &c., instil into the minds of a lot of little boys, the elements, not of war, but of peace. Instead of making them ferocious—to use Mr. Rarey's expression—these words 'gentle' them. By learning to be subservient not to their own will, but to the will of others, they became fit in every possible department to serve their country."

Any one who will take the trouble to read the evidence submitted by Mr. Chadwick, must admit that it entirely bears out his estimate of the important results both to the individual pupil and to the nation, which may be expected to flow from the combination of the two proposed changes in the general system of public education. The witnesses may indeed, be said to be almost unanimous in their views, and one goes so far as to say that even the author, Mr. Chadwick himself, underrates their value and importance.

That military drill can be taught to boys at school more effectively and economically than afterwards, is a proposition which few probably will be disposed to dispute. Many, however, may feel inclined to ridicule the idea of "naval drill" in inland schools. On this point one of Her Majesty's School Inspectors, Mr. Tuffnel, cites the opinion of the late Recorder of Doncaster—Dr. Hall:—

"When I first saw," wrote Dr. Hall, "the contrivance (a ship rigged with masts and ropes at a school) at Mettray, in France, I could not refrain from intimating a doubt as to its practical utility. But I found that I was quite mistaken. In France the experiment was tried at the suggestion of the Minister of the Marine himself,

and the youths so exercised are received on board ship as sailors, not as lads. At Ruysselade the success is still more striking. In the course of last year, the second of the experiment, no fewer than sixty-four colonists (youths educated at the institution) entered the mercantile marine and the military marine, and their conduct has been so superior that the establishment is overwhelmed with applications from ship-owners."* The success of the naval drill, wherever it has been tried in English schools, has, as might have been expected, been quite as satisfactory as in France.

The gain to the productive energy of the country, resulting from the drill system, is a subject of which the importance cannot be overrated. In an opening address delivered by Mr. Chadwick before the British Association for the Advancement of Science, in 1862, he returns to this topic, and discusses it in considerable detail. In that address he shews conclusively the immensely superior efficiency of educated labor over uneducated labor, of those educated under his system over those brought up under the old routine. "On the practical testimony," he says, "of such men as the distinguished members of this association, large employers of labor, Mr. W. Fairburn and Mr. Whitworth, it is established that for all ordinary *civil* labor, four partially trained or *drilled* men are as efficient as five who are undrilled. In other words, considering the educated child as

* In the number of *The Athenæum* for December 31st, 1864, there is an interesting account of the results of the "half-time" system in the children's establishment at Limehouse in England :—

"The school is conducted on what is called 'half-time,' a system much recommended, and found to work extremely well. Mr. Moseley, the intelligent and earnest superintendent, gave it as his decided testimony, that the children come to their lesson-books brighter and fresher and give more close and efficient attention when they are on half-time. The children are in school on alternate days, half of them being in the school, and the others employed in industrial occupations. The children are not occupied more than eighteen hours in the week in close book-instruction, the other portion of their time being employed in industrial training. * * *

"The addition of physical training is a wonderful improvement in the system of education. The influence of the drill gives the boys self-respect; they become smart, active clean-limbed, adroit; they acquire the control over their own limbs. Systematized drill gives the boys, early, an initiation into the virtues of duty, order, obedience to command, self-restraint, punctuality, patience,—no small addition to the value of a man's heritage in himself! Cheerfulness and prompt obedience seemed the characteristics of the children, both boys and girls."

an investment made by the State, for a trifling expense of about one pound per head, the productive power of that investment may, by physical training, be augmented by one-fifth for the whole period of working ability. Some distinguished authorities," he adds, "consider that he understates the gain of productive power when he put it down as one-fifth, and assert that it is practicable to give to three men by this system the working-power of five." Now, what does this mean? It means that we can, by a change of our mode of education, add as much to the productive energies of the nation as if we had added one-fifth, if not two-fifths, to the number of the working classes, and this " hout the expense of educating the additional one-fifth, feeding, clothing, housing them or administering their public affairs."

We now proceed to say a very few words upon the last topic which we propose to discuss in connection with this subject, namely: the bearing of the half-time system with military drill on the question of our national defence.

From the Report of the Chief Superintendent of Education for Upper Canada for 1860, it appears that the number of boys attending the Common Schools in that part of the Province was, in round numbers, 172,000; last year the number was 190,000.

The number of boys attending the Common Schools in Lower Canada, for 1860, is not stated in the Report of the Superintendent for Lower Canada. The total number of pupils, however, is given, and assuming the proportion between boys and girls to be about the same as in Upper Canada, the number of boys attending schools that year may be put down at about 80,000. The total number of boys, therefore, in Upper and Lower Canada, attending school in 1860, would be about 250,000 or a quarter of a million. Assuming, however, one-fifth of this number om physical or other causes, incapable of drill, and this i less, an over-estimate, there would still remain 200,000 boys undergoing drill in our common schools—if the system was universally carried out. At the end of ten or twelve years from the first inauguration

of such a system in Canada we should have, probably, half a million of youths who had undergone a regular course of drill; a very large proportion of whom would be capable of bearing arms, and, should the emergency arise, could be readily converted into good and serviceable soldiers. Our common schools would thus be made the nurseries of our militia.*

It is not very long since the heart of our people was stirred at the near prospect of a struggle between the Mother Country and the States. That struggle has been for the present happily averted; but who shall say for how long? It is to be hoped that if the danger which then threatened us should hereafter actually come upon us we may not be found as hopelessly unprepared to meet it as we then were. And, assuredly, we shall not be unprepared for such an emergency, if, we shall have previously established military drill as part of the ordinary instruction given in all our public schools.

It has been wisely said by one of our ablest statesmen, referring to the recent threatened difficulties with our neighbors: "That it is the first point of patriotism with us to create an enthusiastic attachment among all orders of men for our Constitution." If this be the first point of patriotism, I should say that the second is to give all orders of men in our State the skill and ability necessary to enable them to stand forth confidently in the hour of danger in defence of their altars and their homes.

It is to be remembered, too, that within the last few years the position of Canada, both as regards the Mother Country and the States, is entirely changed. To England we had been in the habit of looking with confidence for protection from every danger, and from the States we thought there was no danger to be apprehended. Now, on the contrary, we have received warning from England that we must take measures to protect ourselves, and, at the same time, we have received warning from our neighbors that we need to do so. It is this peculiar crisis in our colonial

* Drill when thoroughly acquired in youth, would, like swimming, riding or skating, remain a permanent acquisition. So true is the maxim:

"Quo semel est imbuta recens servabit odorem testa din."

history which gives to the question of our national defences such paramount interest at the present moment In the energy and zeal with which, on the recent occasion to which we have referred, men of all ranks, from one end of the Province to the other, responded to the call to enrol themselves for the defence of the country, we have an earnest and a proof of the spirit which animates the people. It will be the wisdom of our statesmen to foster and encourage this spirit of patriotism, and to turn it to the best account.

Our neighbors across the lines have not been slow to perceive that the best way of promoting the growth of patriotism and a love of military life among their citizens is by following out the Chadwick system, and making military drill part of the ordinary business of their schools. The system has in fact been in practical operation for the last two or three years in many schools and colleges in the the Union. The Governors of the States of New York and Massachusetts have, in their addresses to the State Legislatures, called attention to the subject as one of momentous importance. Educational reformers have advocated it, and measures have been introduced (if they have not been actually passed) into the Legislatures of certain States, to make military drill compulsory on all boys above ten years of age attending the schools which receive aid from the public purse. "*Fas est et ab hoste doceri.*" We have learned from our neighbors many a lesson, which had far better been left unlearned; let us learn from them, in this at least, one good and useful lesson. A senator in Massachusetts lately, giving his views on the importance of military studies in colleges, says: "Let the drill be regular and compulsory, taking the place of the very irregular and inefficient physical exercise now in vogue, and our colleges would be vastly improved in their educational form, and the commonwealth would, in a short time, have a numerous body of intelligent men, well skilled in the military science and art, who will become teachers in our lower grades of schools, and be competent, when the alarm is sounded, to lead our citizen soldiers in the field."

In view then of the present crisis of our national history, it is satisfactory to know that in Canada some steps are being taken towards "putting our house in order." In both sections of the Province the able Superintendents of Education have, of their own accord, established military drill in a large number of the grammar and common schools throughout the country. In the *Journal of Education* for Upper Canada, many admirable articles on the subject of military drill in schools have from time to time been published. The Chief Superintendent of Education in Upper Canada, informs me, that eighteen grammar schools reported military drill as part of their course of training in 1863, and he also states, what is perhaps even more important, that during the last six months of 1863, the students in the Normal School have formed themselves into a drill association, which he adds will doubtless contribute much to the general introduction of military drill into the Common Schools of Upper Canada.*

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* I have much pleasure in quoting the following extract from the Annual Report of the Chief Superintendent of Education for Upper Canada, for the year 1863, published since the date of my paper. Under the head of "Military drill in schools" the Superintendent writes:—

"The Board of Common School Trustees in the City of Toronto have, with praiseworthy intelligence and public spirit, introduced a regular system of military drill among the senior male pupils of their schools; the Board of Trustees in Port Hope have done the same. The system of military drill can be easily introduced into the schools of all the cities, towns and villages in Upper Canada, and perhaps in some of the larger rural schools; and the military training of teachers in the Normal School, together with the large number of persons who are being taught and certificated in the Government Military School, afford great facilities for making military drill a part of the instruction given in the grammar and common schools referred to.

"In the neighboring States this subject is engaging the anxious attention of the governments and legislatures; and military drill is likely to become a part of the system of education in all the public schools of their cities and towns. The Legislature of Massachusetts, at its last session, passed a resolution directing the State Board of Education 'to take into consideration the subject of introducing an organization of scholars, above the age of twelve years, for military drill and discipline.' The Board appointed a Committee (of which the governor of the State was chairman) to investigate the subject, and to enquire into the result of an experiment which has been tried for two or three years in one of the towns of the State—the town of Brookline. The result of the enquiry is thus stated—'The boys in the older class can already be selected from their playmates *by the improvement of their forms.* Habits of prompt, instant, and unconditional obedience are also more successfully inculcated by this system of instruction than by any other with which we are acquainted. A perfect knowledge of the duties of the soldier can be taught to the boys during the time of their attendance at the public schools, the

In connection with the movement may be mentioned the encouraging fact, that the companies which have been formed in the schools and colleges, both in Upper and Lower Canada, are amongst the most proficient in the Province, and that they have received high encomiums on several occasions from the military officers who have inspected them. This is, indeed, only what might have been anticipated. Colonel Wily, of the Adjutant General's Department (himself an experienced soldier), on whose authority the preceding statement is made, has long earnestly advocated the introduction of military drill into schools, and he cites, as a proof of the practical results of the system, the admitted superiority of the militia of the Channel Islands, particularly of the Island of Jersey, of which he is a native.*

Drilling and volunteering have, for the last two years, been the order of the day in Canada, and most men under fifty and some over that age have been initiated in the "goose-step," and learned the mysteries of "forming fours." If from our drill ex-

obviating the necessity of this acquisition after the time of the pupil has become more valuable. A proper system of military instruction in the schools of our commonwealth would furnish us with the most perfect militia in the world; and we have little doubt that the good sense of the people will soon arrange such a system in all the schools of the State.'"

The Committee adds the following remarks, which are as applicable to Upper Canada as they are to Massachusetts:—

"The public schools are maintained at the public expense, in order to prepare youth for the duties of citizenship. One of these duties is to aid in the defence of the Government whenever and however assailed. Surely, then, there is no incongruity, no want of reason, in introducing into the schools such studies and modes of discipline as shall prepare for the discharge of this equally with the other duties which the citizen owes to the State.

"But can this be done without detriment to progress in other branches? Can it be done without loss of time? The Committee is satisfied that it can, and that thereby a large amount of practical knowledge and discipline in military affairs may be attained, and at the same time a very great saving of time and labor be effected, which, under a system of adult training, would be withdrawn from the productive industry of the country."

* Under the admirable militia organization which has for centuries obtained there, every boy, between the age of fourteen and sixteen, is compelled to attend drill once a week, commodious drill sheds, and competent drill instructors being provided for the purpose. Into the details of the admirable and most economical militia organization of the Island of Jersey it would be out of place to enter here. I may, however, observe that those who are charged with the responsible task of organizing our militia might possibly find it not unprofitable to enquire into the working of a system which has produced, at a very trifling cost, a militia probably unequalled in the world. And it will probably be found that the great secret of the success of that system lies in the early military drill of every boy upon the island.

perience we have learned nothing more, we must have at least learned this lesson: that soldiers are not made in a day, and that to expect to make an efficient militia by drilling men, taken from the plough or from the workshop, for three or four weeks in the year is simply absurd.

An English statesman once designated the militia as *depositories of panic*. And the great Dryden describes the militia of his day in far from flattering terms, as

> "Mouths without arms, maintained at vast expense,
> In peace a charge, in war a weak defence."

If we desire to have in Canada a militia the opposite of this; a militia which will cost us little; one of which we may feel proud in peace, and upon which we may rely with confidence in time of war; a militia in a word which will recal the memories, and be ready to repeat the deeds, of our ancestors in 1812; we must see that our sons, while at school, learn thoroughly their military drill. There let us instruct them in the first rudiments of the arts of war as well as peace. There let us teach them to regard it as their pride as well as their duty to be *ready, aye ready*, to stand forth, when the need comes, to do or die for their country. There let us imbue them with that high and noble patriotism, that spirit of intelligence and self-reliance which, aided by physical health and strength, will make them good men, good citizens, and good soldiers, the ornament at once, and best defence of their country.*

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* Schools for the military instruction of candidates for commissions in the Service Militia of Canada were opened, about the date of this paper, April, 1864, in Quebec and Toronto. These schools have been most successful, and by the end of the year upwards of two hundred and fifty persons had obtained first class certificates.† In connection with these schools there are two points which the year's experience of their working has, I think, conclusively established and to which I wish to call attention in corroboration of the general arguments advanced in the present paper:—

1st. That, as a general rule, the boys have mastered the drill more easily and more thoroughly than the men.

2nd. That the six or eight weeks' tuition in the drill-shed has served, in a way quite unexpected by the parents, not only to brighten and sharpen the boys' wits, but even to make them, in many cases more docile, useful and agreeable at home.

† *Report on the state of the Militia for* 1864, p. 8.

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